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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/080,145	02/20/2002	Sang Hyeon Baeg	CISCO-4979	9291

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David B. Ritchie
Thelen Reid & Priest LLP
P. O. Box 640640
San Jose, CA 95164-0640

EXAMINER

TRIMMINGS, JOHN P

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 07/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/080,145	Applicant(s) BAEG ET AL.	
	Examiner John P Trimmings	Art Unit 2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-21 are presented for examination.

Specification

1. The disclosure is objected to because of the following informalities: paragraph [0036] contains references to "RET" and "SOT" of FIG.9. The figure does not contain these references. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 11 is rejected under 35 USC 112 first paragraph because it is based on a single means, i.e., where a means recitation does not appear in combination with another recited element of means, it is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. Ref.; MPEP Chapter 2164.08(a).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Lai et al., U.S. Patent No. 6763486. Lai et al. teaches a receiver for boundary scan testing of differential interconnections between the receiver and a transmitter (column 1 lines 52-65 and column 7 lines 19-22), the receiver comprising: an input test buffer having null detection capability (column 6 lines 13-25); and an interface mechanism for providing at least partial test coverage for at least one of five fault syndromes that may be encountered during boundary scan testing (FIG.6 Frequency Detector Data).
4. Claims 20 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Lai et al., U.S. Patent No. 6763486. Lai et al. teaches a method and means for providing at least partial test coverage for at least one of five fault syndromes that may be encountered during boundary scan testing of differential interconnections between a receiver and a transmitter (column 1 lines 52-65 and column 7 lines 19-22), the method and means comprising: receiving an analog differential test signal pair (FIG.10 Rx, Aux1, Aux2); converting the analog differential test signal pair into a digital differential test signal pair (FIG.10 Boundary Decoder); and detecting a null condition in the digital differential test signal pair indicating that one of the five fault syndromes has occurred (column 6 lines 13-25).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-6, 11-15, 8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lai et al., U.S. Patent No. 6763486, in view of Kim et al., "Frequency Detection-Based Boundary-Scan Testing of AC Coupled Nets".

As per Claims 2 and 11:

Lai et al. further teaches the receiver as defined in claim 1, wherein the interface mechanism comprises a plurality of detectors (phase and frequency, see SUMMARY). However, Lai et al. fails to teach generating data and fault indicator signals. However, in an analogous art, Kim et al. does teach this feature in Table 1. And an advantage stated is that the approach is scalable with frequency and capacitor sizes. And one with ordinary skill in the art at the time of the invention, motivated as suggested, would find it obvious to provide the capabilities of Kim et al. with the receiver described by Lai et al. in order to provide multiple fault indicators.

As per Claims 3 and 12:

Lai et al. further teaches the receiver as defined in claim 2 or 11, wherein the interface mechanism further comprises a technology mapper (FIG.6 Frequency Detector) for processing the one or more output signals from the input test buffer (FIG.6

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Rx Buffer) into one or more suitable input signals for the interface mechanism (FIG.6 Data). And in view of the motivation previously stated, the claims are rejected.

As per Claims 4 and 13:

Lai et al. further teaches the receiver as defined in claim 2 or 11, wherein the interface mechanism further comprises an integrator for processing the data and fault indicator signals of the detectors into one or more suitable output signals for the interface mechanism (FIG.10 Scan chain bit). And in view of the motivation previously stated, the claims are rejected.

As per Claims 5 and 14:

Kim et al. further teaches the receiver as defined in claim 2 or 11, wherein one of the plurality of detectors is a signal recoverer for recovery of the test data signal from the transmitter (see page 51 Figure IC3 Capture circuits used for scan cell inputs). And in view of the motivation previously stated, the claims are rejected.

As per Claims 6, 8, 15 and 17:

Kim et al. further teaches the receiver as defined in claim 2 or 11, wherein one of the plurality of detectors is an AC short/null detector and AC detector (see AC Detector Table 1).

6. Claims 7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lai et al., U.S. Patent No. 6763486, in view of Kim et al., "Frequency Detection-Based Boundary-Scan Testing of AC Coupled Nets" as applied to Claim 2 or 11, and further in view of Ichie, U.S. Patent No. 5050187. Neither Kim et al. or Lai et al. teaches the receiver as defined in claim 2, wherein one of the plurality of detectors is a DC short

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detector. But in an analogous art, Ichie teaches this feature in FIG.11 F and in column 10 lines 41-63. And in column 1 lines 32-67 and column 2 lines 1-65 the inventor boasts of a system that detects and compensates for detrimental DC oriented transmission characteristics in an AC coupled system. And so, motivated as suggested to make a more reliable AC coupled system, one with ordinary skill in the art at the time of the invention would find it obvious to include the circuits of Ichie in the receiver of Kim et al. and Lai et al.

7. Claims 9, 10, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lai et al., U.S. Patent No. 6763486, in view of Kim et al., "Frequency Detection-Based Boundary-Scan Testing of AC Coupled Nets" as applied to claim 2 or 11, and further in view of Koenemann et al., U.S. Patent No. 5617426. The claims cite the receiver as defined in claim 2, wherein a heterogeneous capacitor detector comprises a first flip-flop for sampling a first signal on an even test clock signal, a second flip-flop for sampling a second signal on an odd test clock signal, and a logic gate for combining the outputs of the first and second flip-flops. Neither Lai et al. or Kim et al. teaches this feature. But in an analogous art, Koenemann et al. does teach a path delay fault detector (column 2 lines 47-51) which consists of 1st and 2nd flip-flops (FIG.5A 32, 33) and logic combining the outputs (FIG.5A 35). One with ordinary skill in the art at the time of the invention would recognize that capacitance in a line and path delays are synonymous. And in column 2 lines 11-52 the advantage is that such a circuit can detect delay faults. One with ordinary skill in the art at the time of the invention, motivated as suggested, would find it obvious to combine the latches of

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Koenemann et al. with the receiver of Kim et al. and Lai et al. in order to detect capacitance faults.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P Trimmings whose telephone number is 703-305-0714. The examiner can normally be reached on Monday through Thursday, 7:30 AM to 6:00 PM.

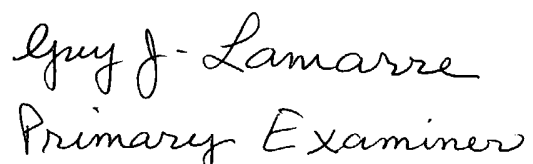
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on 703-305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jpt



John P Trimmings
Examiner
Art Unit 2133



Primary Examiner